

## HYDROCARBONS

Hydrocarbons are organic compounds composed with carbon and hydrogen element. Those compound are the starting point of all organic compound and Due to the unique ability of carbon to bond other carbon atom to form a long chain which may have also braches do not expect a hydrocarbon of being few different compounds. Most of hydrocarbons can be found naturally in crude rubber and crude oil like natural gas and petroleum. It also occurs in different trees and plants.

### TYPES OF HYDROCARBONS

Hydrocarbons are of two types

- Aliphatic hydrocarbon
- Aromatic Hydrocarbon

### ALIPHATIC HYDROCARBON

Aliphatic hydrocarbons consist of straight or branched chains of carbon atoms with the other valence electrons involved in bonds with hydrogen.

For example:

- ✓  $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH}_2\text{-CH}_3$ ;
- ✓  $\text{CH}_2 = \text{CH}_2$

This type of hydrocarbons is divided into two groups due to the type of carbon bonds the compound contain.

Those groups are:

- i. Saturated aliphatic hydrocarbon
- ii. Unsaturated aliphatic hydrocarbon

The **saturated aliphatic hydrocarbon** is compound in which all carbon-carbon bonds is single bonds and are known as Alkanes, for example Butane, Methane, propane and so on

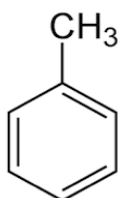
On the other hand, the **unsaturated aliphatic hydrocarbon** contains at least one double or triple bond and it is known as alkenes and alkynes respectively. An example of an alkene is ethene, the simplest alkene, which consists of two double-bonded carbon atoms and four hydrogens atoms.

### AROMATIC HYDROCARBON

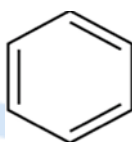
The aromatic hydrocarbons are also called “**arenes**” are compounds that contains benzene ring as part of their structure which is highly unsaturated, and most of them possess pleasant odour. However, there are other example of hydrocarbons which do not contain a benzene ring but instead contain other highly unsaturated ring. Those containing benzene ring is known as **benzenoids** and those not containing a benzene ring are known as **non-benzenoids**.

The arenes are the starting point for many medicinally important compounds, including Aspirin and Morphine.

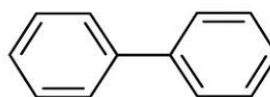
Example of aromatic hydrocarbon is toluene and benzene



Toluene



Benzene



Biphenyl

## THE USES OF HYDROCARBONS

Hydrocarbons have different application in our daily life like being

- The source of energy for domestic combustion and vehicles fuels, the example is methane, butane, benzene and biodiesel
- The starting material of plastic products and other industrial chemicals, the example is ethene which is used to produce plastic polyethylene materials
- The organic solvent and cleansers especially pentane in liquid state
- The engine lubricants and greases
- The starting material for manufactures of dyes and drugs.
- Acetylene is used in acetylene torch for welding.

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